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**(54) PRODUCTION OF HIGH-BULK DENSITY
DETERGENT GRANULE**

(57) Abstract:

PURPOSE: To obtain the granules contributing to the resource conservation of the vessels, space saving and simplification of the use by consumers therefor, by mixing detergent granulates of specific bulk density through mutual granular contact at each specific Froude number and volume packing rate to effect even higher bulk density of the granulates than the conventional case.

CONSTITUTION: Detergent granulates with a bulk density of 500-1000g/L are fed into a V-shaped mixer or double conical type mixer where the granulates are mixed for 5-120min through mutual granular contact while applying impact force or shear force thereto under such conditions that a Froude number (Fr) of formula $Fr = V^2 / (R \times g)$ [Fr is Froude number; V is the circumferential speed of the outermost circumference of the V-shaped or double

conical type mixer (m/s²); R is the radius of the outermost circumference from the revolving center of the above mixer (m); g is acceleration of gravity (m/s²)] stands at 0.2-0.7 and volume packing rate at 15-50%, thus obtaining the objective granules.

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